REMARKS

Claims 1-5, 7, 9-13 and 17-49 presently appear in this case. Claims 21, 26-30, 35 and 40-44 have been withdrawn from consideration. No claim has been allowed. The official action of April 16, 2007, has now been carefully studied. Reconsideration and allowance are hereby respectfully urged.

The examiner states that the application contains claims directed to fourteen patentably distinct species of NS-specific antigen. The examiner has required applicant to elect a single disclosed species for prosecution on the merits to which the claims will be restricted if no generic claim is finally held to be allowable. The examiner states that claims 1-3, 9 and 19 are currently generic. The examiner states that upon allowance of a generic claim, applicant will be entitled to consideration of claims to additional species that depend from or otherwise require all the limitations of an allowable generic claim. The examiner states that in a telephone conference with Roger Browdy on 22 November 2006, a provisional election was made with traverse to prosecute the species of myelin basic protein. The examiner has required applicant to affirm this election. Claims 21, 26-30, 35 and 40-44 have presently been withdrawn from further consideration by the examiner.

Applicant hereby confirms that a telephone election was made on November 22, 2006, of the species myelin basic protein (MBP). However, this election was made by the undersigned in error. It was made without consulting with applicant in the mistaken belief that such an election would expedite prosecution. Applicant has now advised the undersigned that the preferred species for initial examination in this case is the Nogo-A peptide, and particularly the Nogo-A p472 peptide. Accordingly, it is respectfully requested that the examiner permit applicant to shift its election, under the circumstances. This should not work inordinate hardship on the examiner as no prior art was found to the elected species and, presumably, the examiner has already extended the search to the species of the generic claims, so as to include Nogo. Furthermore, MPEP 819 does not prohibit switching election, but only indicates a general rule, for which there presumably may be exceptions. Accordingly, granting of this request and permitting applicant to shift election of species is respectfully urged. If the examiner permits this switch, then the elected claims will be 1-5, 7, 9-13, 15, 17, 18, 21, 22, 28, 29, 31, 35, 36, 42, 43 and 45-49.

Claims 1-5 7, 9-13, 15, 17-20, 22-25, 31-34, 36-39 and 45-51 have been rejected under 35 U.S.C. 112, first

paragraph, because the specification, while being enabling for a method for reducing secondary neuronal degeneration or a method for ameliorating the secondary neurodegenerative effects that follow neuronal damage caused by an injury, disease, disorder or condition in the CNS or PNS by administering to an individual MBP, p51-70 of MBP, or T-cells activated against MBP or p51-70, thereby reducing secondary neuronal degeneration at the injury site, does not reasonably provide enablement for the administration of other NS-specific antigens, immunogenic or cryptic epitopes thereof, or modifications thereof. Further, the examiner states that the specification is enabling for a method for reducing secondary neuronal degeneration or a method for ameliorating the secondary neurodegenerative effects that follow neuronal damage caused by an injury in the CNS or PNS comprising administering to an individual Noga-A p472 (SEQ ID NO:19) peptide. However, the examiner states that the specification does not enable the invention commensurate in scope with the claims. The examiner states that the specification does not teach the reduction or inhibition of secondary neuronal degeneration by administration of any nervous system specific antigens other than Nogo or MPB and, more particularly, it does not teach that all possible peptides derived from all possible NS-specific antigens (or activated T-cells thereto)

are able to reduce secondary neuronal degeneration in the central nervous system or peripheral nervous system in an individual. The examiner states that the specification provides no guidance regarding what immunogenic/cryptic epiotpes or modified NS-specific antigens should be utilized for the desired activity and that trial and error experimentation would be required, which the examiner considers to be undue. The examiner considers that there is a large quantity of experimentation necessary to identify all possible NS-specific antigens, immunogenic or cryptic epitopes thereof, or antigens that are 90% identical to said NS-specific antigen (or activated T-cells thereto) that would be operable in the invention, so that undue experimentation would be required of the skilled artisan to make and/or use the claimed invention. This rejection is respectfully traversed.

So as to advance prosecution of this case, the present claims have now been amended to delete reference to cryptic epitopes and modifications to leave an antigen that is 90% identical to the NS-specific antigen. Thus, the claims now only recite administration of NS-specific antigens or immunogenic epitopes thereof, or T-cells sensitized therewith. This limitation is made without prejudice toward the continuation of prosecution with respect to cryptic epitopes and modifications in a continuing application. The

information in the present specification, combined with the additional evidence that is of record in this case as to other NS-specific antigens that have been shown to be operable in the present invention, establish that it would not take undue experimentation to find other NS-specific antigens that would be operable for the purpose of the present invention.

As was explained to the examiner in great detail by the Prof. Michal Schwartz in the interview on July 14, 2004, the present invention is not based on any activity of the peptides, *per se*, on the disease, but is based on the concept that if activated T-cells can be caused to accumulate at the site of neuronal degeneration, secondary neuronal degeneration will be ameliorated or reduced. It was explained and shown with a myriad of prestigious publications from the laboratory of the present inventors, that the mere presence of these activated T-cells at the site of secondary neuronal degeneration causes a cytokine response that has a significant effect in reducing the secondary neuronal degeneration. When an NS-specific antigen is administered, which antigen is one that is present at the site of secondary neuronal degeneration, this will cause endogenous T-cells to become activated thereby and those T-cells will accumulate at the site of the secondary neuronal degeneration because of the presence at this site of the peptide with which it has been

activated. It is not the direct action of the T-cells on the peptide that causes the effect of the present invention, but the mere accumulation at the site of secondary neuronal degeneration, which causes a cytokine response that in turn has a significant effect in reducing the secondary neuronal degeneration.

Admittedly, there are many NS-specific peptides that exist in the CNS and the PNS. However, there is no reason to believe that any of these peptides will not be operable for the purpose of the present invention, so long as they exist at the site of the secondary neuronal degeneration, as their only purpose is to activate T-cells that will then accumulate at the site of that peptide, including the site of the secondary neuronal degeneration, so as to cause a cytokine response that has a significant effect in reducing the secondary neuronal degeneration.

The examiner has not explained why it would take undue experimentation to determine whether any given NS-specific peptide may be present at the site of secondary neuronal degeneration, as is required by the claims. This is not trial and error experimentation, but can be accomplished in a systematic way, in a manner in which scientists are accustomed.

The examiner's attention is directed to the chart attached to applicant's preliminary amendment of March 2, 2006, showing that, besides MBP, also MOG, PLP and IRPB have been shown to be effective in the optic crush test and that Noga has been shown to be effective in the spinal cord test, all in addition to MBP. IRBP has also been shown to be effective in the IOP test. T-cells against Noga have also been directly administered and shown to be effective in the spinal cord test. Thus, a wide range of diverse NS-specific antigens have been shown to be operable to cause T-cells to accumulate at the site of secondary neuronal degeneration and to reduce that secondary neuronal degeneration. This evidence serves at least as a "proof of concept" and is sufficient to establish operability in a sufficient number of species to establish possession of the genus. Accordingly, it would not take undue experimentation to establish the operability of the entire scope of the present claims, particularly as presently amended.

Similarly, once it is established that a particular NS-specific peptide resides in the location of the secondary neuronal degeneration, it would not take undue experimentation to determine which epitopes thereof serve to activate T-cells against the peptide. Again, this can be done in a systematic manner by those of ordinary skill in the art (which skill is

very high in this particular art). The enablement requirement permits considerable experimentation. It only excludes undue experimentation. See MPEP 2164.01.

Accordingly, reconsideration and withdrawal of this rejection are respectfully urged.

Claims 1-5, 7, 9-13, 15, 17, 18, 22, 23, 31, 36, 37 and 45-51 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The examiner states that the skilled artisan cannot envision the NS-specific antigens encompassed by the methods and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method. The examiner states that adequate written description requires more than a mere statement that it is part of the invention, but the NS-specific antigen itself is required. The examiner states that one cannot describe what one has not conceived. This rejection is respectfully traversed.

As discussed above with respect to the enablement rejection, the claims have now been amended so as to exclude cryptic epitopes and modified epitopes. It is not understood why the examiner takes the position that applicant has not conceived and cannot envision NS-specific antigens that are useful in the present invention. The present specification

conceives of a long list of such antigens (see the election requirement), the sequences of all of which were known to the art at the time that the present application was filed. Applicants have not invented anything with respect to new NS-specific peptides. The invention only uses such known peptides. The examiner has cited evidence that the art is well aware of myriads of NS-specific peptides. All one has to do for the purpose of the present invention is determine whether any given peptide is present at the site of neuronal damage. If it is, it would be expected to be operable for the reasons discussed above.

This is not a case, as in the case law cited by the examiner, where applicant has invented a novel protein or DNA sequence. Here the present invention is directed to the discovery that activation of T-cells with NS-specific antigens that exist at the site of secondary neuronal degeneration will cause T-cells activated thereagainst to accumulate at the site of the secondary neuronal degeneration and cause a release of cytokines that will, in turn, cause the secondary neuronal degeneration to be reduced. All this was explained in great detail in the interview of record in this case, with reference to experimental evidence. The present claims no longer claim modifications or cryptic epitopes. The present claims only claim known sequences. While it is possible that additional

peptides will be discovered in the future that may also be useful for the present invention, the present invention does not claim such peptides, but only the use of such peptides.

The method of the present invention is an extremely important discovery, as is evidenced by the many publications in prestigious journals relating to the present invention. The inventors' conception is that the accumulation of activated T-cells at the site of secondary neuronal damage will cause amelioration of that damage by release of cytokines. There is adequate written description of this conception. As discussed above with respect to the enablement rejection, there is no reason to believe that the full scope of the present invention will not be operable. For all of these reasons, one of ordinary skill in the art would understand that the present inventors were in possession of the full scope of the presently claimed invention at the time the application was filed. Accordingly, reconsideration and withdrawal of this rejection is respectively urged.

Claims 1-5, 7, 9-13, 15, 17-20, 22-25, 31-34, 36-39 and 45-51 have been provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-10 and 14-22 of co-pending application no. 11/563,630. The examiner states that both sets of claims recite a method for reducing secondary neuronal

degeneration comprising administering a modified nervous system peptide antigen or peptides activated thereagainst. This rejection is respectfully traversed.

The present claims have now been amended so as to no longer read on modified nervous system specific antigens. Accordingly, all of the present claims are patentably distinct from the claims of application 11/563,630 that require modified antigens. Reconsideration and withdrawal of this rejection is therefore respectfully urged.

It is submitted that all the claims now present in the case fully comply with 35 U.S.C. 112, and fully define over the references of record. Reconsideration and allowance are therefore earnestly solicited.

Respectfully submitted,

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